

JC20 Rec'd PCT/PTO 22 JUN 2005

(Amendment of the claims under Article 19)

CLAIMS

1. (Amended) A multi-wire saw for cutting a workpiece while supplying a slurry containing an alkali or mixed acid to a cutting interface between the workpiece and a wire, comprising:

a storage tank with a heating mechanism for storing and heating the slurry;

a thermal insulating pipe for transporting the slurry sent with a pump from the storage tank with a heating mechanism to a position before a position where the wire is incorporated into the workpiece, while keeping the slurry at a predetermined temperature;

a thermostat for keeping a temperature in a vicinity of the workpiece fixed to a stage at the predetermined temperature; and

a wire heating mechanism for heating the wire to the predetermined temperature;

characterized in that the wire heating mechanism includes two conductive pulleys positioned upstream and downstream with respect to a traveling direction of the wire and guiding the travel of the wire, and a power source, which are provided in a traveling path of the wire that is unwound from a wire unwinding bobbin to the cutting interface, and that a voltage is applied to the wire from the power source via the two pulleys so that the wire is heated with Joule heat generated by an electric current flowing through

the wire.

2. (Deleted)

3. (Amended) A multi-wire saw for cutting a workpiece while supplying a slurry to a wire traveling between a plurality of rollers, comprising:

a slurry discharge part for discharging the slurry;

a machining chamber covering at least the slurry discharge part and the workpiece; and

a humidity adjustment mechanism for maintaining a humidity in the machining chamber to a state close to saturated vapor pressure.

4. A multi-wire saw for cutting a workpiece while supplying a slurry to a wire traveling between a plurality of rollers, comprising:

a slurry supply mechanism having a slurry discharge part placed between the roller, which is provided on an upstream side of a site where the workpiece is cut, and the site where the workpiece is cut, characterized in that

the slurry discharged from the slurry discharge part moves along a side surface of the workpiece so that the slurry is supplied to the wire.

5. A multi-wire saw according to claim 4, characterized in that

a sheet component is attached to a side surface of the workpiece.

6. (Amended) A multi-wire saw for cutting a workpiece while supplying a slurry containing abrasive grains to a wire traveling between a plurality of rollers, characterized in that:

a slurry supply mechanism having an holding portion for holding the slurry and a temperature control mechanism for keeping the temperature of the slurry constant and adapted to supply the slurry to the wire as the wire passes through the holding portion is provided on an upstream side of a site where the workpiece is cut; and

a surface constituting the holding portion is provided with a passage hole allowing the wire to pass therethrough.

7. (Deleted)

8. (Amended) A multi-wire saw according to claim 6, characterized in that a surface constituting the holding portion has an openable member provided with a cutout portion, and that when the member is closed, the cutout portion forms the passage hole.